CONNECT: An Open Source Effort to Improve Data Sharing

What is open source software?	Open source software is made available to the public for improvement, whereby the source code is made available for use or modification by others. It is usually developed as a public collaboration. Customizations to open source products are readily available to everyone at no cost.
What is CONNECT?	CONNECT is an open source gateway that enables the connection of health information systems to the NHIN, including federal agencies and private sector health information systems. The architecture enables individual components to be replaced by custom solutions as long as the custom solutions adhere to defined web service interface specifications. CONNECT can run on different hardware and software platforms, as well as services using different programming languages.
What is the history of CONNECT?	In 2008, more than 20 federal agencies decided to connect their health IT systems to NHIN. The Federal Health Architecture created CONNECT as a shared software solution to be used by each agency. CONNECT is a shared software solutions that was built using open source components and includes core standards for security to protect health information.
Who is the sponsor?	Federal Health Architecture is an E-gov initiative led by the Office of the National Coordinator (ONC); NHIN is a federal initiative to facilitate the exchange of electronic health information.
How to obtain it?	The software can be downloaded from the CONNECT website: http://www.connectopensource.org. Downloads include the instruction process, the installation option (how to install the software via GlassFish Binary, Full Binary, Source Code, Solaris), the plug-ins options, any documentation desired, and the chosen version choices.
How do I download the software?	1. Determine software needs by completing a questionnaire. 2. Obtain the NHIN Data Use and Reciprocal Support Agreement (DURSA). 3. Complete/execute the steps in the Connect Gateway Installation Checklist. 4. Sign the NHIN DURSA and obtain approval from NHIN. 5. Perform Gateway Self Test by running SOAPUI (a web service testing tool for Service Oriented Architecture) test to verify installation successful. 6. Conduct NIST Conformance testing. 7. Perform Peer to Peer Testing with the Federal gateway to verify connectivity. 8. Publish endpoint information as a result of the NHIN and CONNECT connectivity are met. 9. Agency endpoints are added to the Universal Description Discovery and Integration (UDDI) and the Interoperability Matrix. 10. Continue to upgrade the Gateway with the latest releases.
What do you do with it once you download the software?	Download the open source baseline, and then customize the software to meet your needs. This requires installation, configuration, and customization of the CONNECT baseline.
What is included? (applications/functionality)	CONNECT Gateway includes the NHIN Gateway, the Enterprise Service Component (ESC),a Universal Client Framework., and a software development kit (SDK). NHIN Gateway locates patients at other health organizations within NHIN, and requests and receives documents associated with a patient, creates audit logs of the requests, authenticates network participants, formulates and evaluates authorizations for release of medical information, and honors consumer preferences for sharing of their information. The Enterprise Service Component, contains a master patient index (MPI), document registry and repository, authorization policy engine, consumer preferences manager, HIPAA-compliant audit log, a software development kit to plug existing systems such as EHRs to support secure exchange of health information across the NHIN. The Universal Client Framework develops applications using the Enterprise Service Component. The Gateway Core Services software development kit allows customization of gateway while connected to the network.
What is not included? (applications/functionality)	Health information exchange software, any clinical or financial applications, or third party products.
What are the capital costs?	The cost of implementation to customer requires technical expertise to install, configure and customize, training of staff, minimum hardware configuration, and third party software.
What are the operating costs?	Vendor support, IT staff including technical and programming, equipment support, equipment refresh, third party product support and maintenance, and third party software costs.
Are there other costs?	Third party products. Depending on the "open source" applications obtained, additional applications may be needed to support other functions. This may lead to integration costs between open source application and purchased software.
What are the staffing needs?	Variable based on the end user, individuals with knowledge in program management, technical staff, VPN/firewall configurations, tester - need experience in Web services, SSL, SAML, Solaris, System Administration, Windows System Administration, VMPlayer, Service Oriented Architecture (SOA), Java, NetBeans, and hardware are desirable.
Are there potential issues with CONNECT?	Immature product, future support and developer staff support needed to continue product development and support, and licensing agreement as open source could change if acquired by someone else.
Are there potential issues with NHIN?	DURSA language allows someone who receives patient information from another source to now be the owner of the data and can use it as they want within the confines of their policies and guidelines; sustainability has not been proven and requires consumer support.
Are there other open source products available to HIEs?	None at this time that serve this connectivity purpose; there is an open source master patient index and record locator service - OpenPIXPDQ, OpenVista, a clinical information system, Veterans Affairs Computerized Patient Record System (CPRS) - VistA.